

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document for New Construction and Operation

Eli Lilly and Company
Indianapolis, Indiana

The Office of Air Management has reviewed an application from Eli Lilly and Company relating to the construction and operation of process equipment for its pilot plant in Building 110 at the Lilly Technology Center-South in Indianapolis. Also, Eli Lilly and Company has petitioned for an alternate site-specific Reasonably Available Control Technology (RACT) plan as provided in rule 326 IAC 8-1-5 for reactors, centrifuges, filters and vacuum dryers in Building 110 in lieu of RACT for these equipment specified in rule 326 IAC 8-5-3(b).

The staff recommends to the Commissioner that the construction and operation along with the SIP revision be approved. This recommendation is based on the following facts and conditions:

A complete application for the purposes of this review was received on October 27, 1993. The petition for SIP revision was received on September 23, 1993. The amended application for construction permit and the SIP revision was received on December 10, 1993. Additional informations were received on January 4, 1994.

Indiana Permit Potential Definition (emissions before controls, based on 80 batches per year, and 32 hours per batch of operation at rated capacity):

<u>Pollutant</u>	<u>Tons per year</u>
Particulate Matter (PM)	21.9
Volatile Organic Compounds (VOC)	29.34

Potential emissions (as defined in the Indiana Rule) of volatile organic compounds (VOC) are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore VOC emissions are considered when evaluating rule applicability relating to the ozone standards. Marion County has been designated as nonattainment for ozone. Therefore VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Marion County has been classified as nonattainment for total suspended particulates (TSP). Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Existing Source Emission Offset Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity): Info taken from AIRS printout and Indianapolis Air Pollution Control Section.

<u>Pollutant</u>	<u>Tons per year</u>
Volatile Organic Compounds (VOC)	1434

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This existing source is a major stationary source for the purposes of Emission Offset, 326 IAC 2-3 and is also a major source for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21, because volatile organic compounds (VOC) are emitted at a rate of 100 tons per year or greater.

Potential Emission Offset and PSD emissions from the proposed modification (emissions after controls, based on limited by permit condition):

	<u>Tons per Year</u>		
	<u>PM</u>	<u>PM10</u>	<u>VOC</u>
Proposed Modification	13.1	13.1	29.34
Emission Significant Levels		15	40
Emission Offset Thresholds	100		

This modification to an existing source is not major for VOC, PM or PM10 because the net emissions increase is less than the significant levels and Emission Offset Threshold level. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply. In addition, the Prevention of Significant Deterioration rules, 326 IAC 2-2 and 40 CFR 52.21, do not apply.

The source has the design capacity to produce less than 1000 Mg/yr, hence it is exempt from 40 CFR 60 Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry.

The distillation units are designed and operated as a batch operation, hence these units are exempt from 40 CFR 60 Subpart NNN - Standards of Performance for Volatile Organic Compounds (VOC) emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.

This pilot plant in Building 110 is subject to 326 IAC 8-5-3 (b)(1) through (b)(6).

VOC emissions from air tray dryers, Prochrom column, distillation column, low temperature bath, MACE cooling system, and Dowtherm J system are less than 33 pounds per day, hence it meets the rule 326 IAC 8-5-3(b)(2).

Building 110 does not operate storage tanks of capacity greater than 2,000 gallons, receiving deliveries from trucks or railcars, storing VOC with a vapor pressure greater than 4.1 psia. A 4,200 gallons acetone (vapor pressure of 3.5 psia) storage tank is a component of Building 110 processes. The acetone tank is equipped with a vapor balancing system that is 90 % effective in reducing emissions during deliveries.

A 7,500 gallons tank is used for storing waste solvent.

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All storage tanks for VOCs with a vapor pressure greater than 0.5 psia at 20 degree centigrade are equipped with pressure/vacuum conservation vents set at a minimum of +/- 0.03 psia.

Therefore, all storage tanks meet the rule 326 IAC 8-5-3(b)(3).

All Building 110 centrifuges and filters having an exposed liquid surface containing VOC will be enclosed. Hence it meets the rule 326 IAC 8-5-3(b)(4).

All Building 110 in process tanks containing VOCs are equipped with tight fitting covers. As per the applicant, these covers are closed at all times unless production, sampling, inspection, or maintenance activities require access to the tank. Hence it meets the rule 326 IAC 8-5-3(b)(5).

Building 110 standard operating procedure as per the applicant is to repair all visible equipment leaks as soon as possible. During module operation, process operators inspect vessels and equipment (valves, flanges, etc.) for visible indications of leaks. Any leaks are repaired as soon as the leaking component is off-line for a period of time long enough to complete the repair. Hence it meets the rule 326 IAC 8-5-3(b)(6).

The air toxics emissions from the pilot plant in Building 110 are less than 10 tons per year each and the total emission of all the air toxics is less than 25 tons per year. Hence it is not a major modification for air toxics.

The applicant has petitioned for an alternate site-specific Reasonably Available Control Technology (RACT) for reactors, centrifuges, filters, vacuum shelf dryers, agitated filter dryer, evaporator, rotary vacuum dryer and distillate receivers for this pilot plant in Building 110 as per rule 326 IAC 8-1-5 in lieu of rule 326 IAC 8-5-3(b)(2). IDEM is of the opinion that the SIP revision sought by the applicant fulfills the requirements of rule 326 IAC 8-1-5. Hence the SIP revision is being forwarded to the U.S.E.P.A for approval.

The construction of this pilot plant equipment in Building 110 will be subject to the conditions of the attached proposed Construction Permit No. CP 097-3341, Plt ID No. 097-00072.

Review Engineer: T.P.Sinha

ANALYSIS:

Eli Lilly and Company has submitted a petition to propose site-specific volatile organic compounds (VOC) Reasonably Available Control Technology (RACT) for its Building 110 pilot plant located at the Lilly Technology Center-South in Indianapolis.

Lilly has also submitted a construction permit application that is intended to serve as the vehicle for IDEM to review the site-specific RACT plan and to issue a construction permit with enforceable permit conditions that embody the site-specific RACT plan and that exempt Building 110 reactors, centrifuges, filters and vacuum dryers from the requirements of 326 IAC 8-5-3(b) (1).

Lilly's petition for SIP revision and construction permit seeks relief from the permit conditions in construction and operating permits issued on August 7, 1987; January 2, 1992 and July 16, 1993 by the city of Indianapolis Air Pollution Control Section (IAPCS).

Building 110 Existing Equipment and Proposed Expansion:

Building 110 is a chemical process research and development source. The source is organized into process 'modules'. A module consists of all the various process units required to produce a product. Each module is an independent production unit. Major process equipment in a module consist of reactor vessels, filters, centrifuges, and dryers in various combinations. Various volatile organic compounds (VOC) are used primarily as solvents in each unit operation.

Existing and proposed process equipment are summarized in the following tables.

Table 1 Module A Equipment

Quantity	Description
3	100 gallon reactor
2	200 gallon reactor
1	300 gallon reactor
1	Vacuum self dryer
2	Air tray dryer
3	Walk-in hood

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Table 2 Module B Equipment

Quantity	Description
2	50 gallon reactor
2	100 gallon reactor
2	200 gallon reactor
1	Vacuum self dryer
2	Air tray dryer
3	Walk-in hood

Table 3 Module C Equipment

Quantity	Description
1	50 gallon reactor
2	100 gallon reactor
3	200 gallon reactor
1	Vacuum self dryer
2	Air tray dryer
3	Walk-in hood

Table 4 Module D Equipment

Quantity	Description
1	100 gallon reactor
2	200 gallon reactor
3	300 gallon reactor
1	Vacuum self dryer
2	Air tray dryer
3	Walk-in hood

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Table 5 30 Gallon-A Module Equipment

Quantity	Description
2	30 gallon reactor
1	50 gallon reactor
1	13 gallon evaporator
1	Vacuum self dryer
2	Walk-in hood

Table 6 30 Gallon-B Module Equipment

Quantity	Description
2	30 gallon reactor
1	50 gallon reactor
1	Vacuum self dryer
2	Walk-in hood

Table 7 Solids Containment Area

Quantity	Description
1	vacuum self dryer
2	Walk-in hood

Table 8 Bulk VOC Storage Tanks

Quantity	Description
1	4000 gallon acetone storage tank
1	7,500 gallon waste solvent tank

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Table 9 Module E Equipment

Quantity	Description
1	500 gallon reactor
1	300 gallon reactor
1	200 gallon reactor
3	100 gallon reactor
2	vacuum self dryer
1	PSE catch tank
1	Floor collection tank (common to E and F)
6	Walk-in hood

Table 10 Module F Equipment

Quantity	Description
1	500 gallon reactor
1	300 gallon reactor
1	200 gallon reactor
3	100 gallon reactor
2	vacuum self dryer
1	PSE catch tank
6	Walk-in hood

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Table 11 C-Wing Equipment

Quantity	Description
6	50 gallon reactor
6	30 gallon reactor
6	5 gallon reactor
6	Vacuum self dryer
1	Rotary vacuum dryer
1	Centrifuge
1	MAce cooling system
1	Distillation Column
1	Walk-in hood

Note:

1. The capacity of the C-wing is 480 gallons. This is on the basis of the largest 12 reactor vessels combination that can be utilized at any one time.

Portable Equipment:

Unit ID	Unit Description	Location: Wing/Module
FH1	24" Single Plate Filter (S.S)	Portable
FH2	36" Single Plate Filter (S.S)	Portable
FH3	36" Single Plate Filter (S.S)	Portable
FH4	36" Single Plate Filter (Hastelloy)	Portable
FH6	24" Single Plate Filter (Glass Lined)	Portable
FH7	24" Single Plate Filter (Hastelloy)	Portable
FH8	36" Single Plate Filter (S.S)	Portable
FH9	24" Single Plate Filter (S.S)	Portable
FH10	36" Single Plate Filter (Hastelloy)	Portable
FH11	36" Single Plate Filter (Hastelloy)	Portable
FH12	16" Single Plate Filter (Hastelloy)	Portable
FH13	30" Agitated Filter/Dryer (Hastelloy)	Portable
FH14	24" Single Plate Filter (Hastelloy)	Portable
FH16	16" Single Plate Filter (Hastelloy)	Portable
FS21	8" Multi-Plate Filter (S.S)	Portable
FS22	12" Multi-Plate Filter (S.S)	Portable

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Portable Equipment:

Unit ID	Unit Description	Location: Wing/Module
FS23	18" Multi-Plate Filter (S.S)	Portable
FS24	18" Multi-Plate Filter (Hastelloy)	Portable
FS25	18" Multi-Plate Filter (S.S)	Portable
FS26	8" Multi-Plate Filter (S.S)	Portable
FS27	8" Multi-Plate Filter (Hastelloy)	Portable
FS28	12" Multi-Plate Filter (Hastelloy)	Portable
FS29	18" Multi-Plate Filter (Hastelloy)	Portable
RC83	Distillate Receivers	Portable
LTB99	Low Temp. Bath	Portable
	Agitated Filter/Dryer	Portable
	CIP System	Portable
	Mill	Portable
VBD 500	Plow Blender	Portable
	Agitated Filter/Dryer	Portable
	CIP System	Portable
	Agitated Filter/Dryer	Portable
	16" Single Plate Filter (Hastelloy)	Portable
	16" Single Plate Filter (Hastelloy)	Portable
	16" Single Plate Filter (Hastelloy)	Portable
	16" Single Plate Filter (Hastelloy)	Portable
	16" Single Plate Filter (Hastelloy)	Portable
	16" Single Plate Filter (Hastelloy)	Portable

Other Equipment:

Unit ID	Unit Description	Location: Wing/Module
GR 82	Fitzmill Grinder	
GR 86	Fitzmill Grinder	
GR 87	Quatro Mill	
PC 991	Prochrom Column	D/High Bay
	Dowtherm J System	D/
	Unit 93 Syltherm Cooling System	C/
PF9093	8 gal TFE-lined can (S.S)	Portable
PF9094	8 gal TFE-lined can (S.S)	Portable
PG40	40 L Glass-lined tank	Portable
PG41	40 L Glass-lined tank	Portable
PG 44	110 L Glass-lined tank	Portable
PG 45	110 L Glass-lined tank	Portable
PG 46	110 L Glass-lined tank	Portable
PG 47	120 L Glass-lined tank	Portable
PG 48	180 L Glass-lined tank	Portable
PG 49	180 L Glass-lined tank	Portable
PG 50	180 L Glass-lined tank	Portable

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Other Equipment:

Unit ID	Unit Description	Location: Wing/Module
PG 51	110 L Glass-lined tank	Portable
PG 52	110 L Glass-lined tank	Portable
PG 9024	15 gal Glass-lined tank	Portable
PG 9025	15 gal Glass-lined tank	Portable
PG 9026	15 gal Glass-lined tank	Portable
PG 9027	15 gal Glass-lined tank	Portable
PG 9028	50 gal Glass-lined tank	Portable
PG 9029	50 gal Glass-lined tank	Portable
PG 9081	5 gal Glass-lined tank	Portable
PG 9082	75 gal Glass-lined tank	Portable
PH 9114	8 gal Hastelloy C Can	Portable
PH 9115	8 gal Hastelloy C Can	Portable
PH 9116	8 gal Hastelloy C Can	Portable
PH 9117	8 gal Hastelloy C Can	Portable
PH 9118	8 gal Hastelloy C Can	Portable
PH 9119	8 gal Hastelloy C Can	Portable
PH 9120	8 gal Hastelloy C Can	Portable
PH 9121	8 gal Hastelloy C Can	Portable
PS 70	180 L tank (S.S)	Portable
PS 9001	13 gal tank (S.S)	Portable
PS 9002	62 gal tank (S.S)	Portable
PS 9003	62 gal tank (S.S)	Portable
PS 9004	62 gal tank (S.S)	Portable
PS 9005	62 gal tank (S.S)	Portable
PS 9006	62 gal tank (S.S)	Portable
PS 9007	62 gal tank (S.S)	Portable
PS 9008	62 gal tank (S.S)	Portable
PS 9009	62 gal tank (S.S)	Portable
PS 9010	55 gal tank (S.S)	Portable
PS 9011	55 gal tank (S.S)	Portable
PS 9012	55 gal tank (S.S)	Portable
PS 9013	55 gal tank (S.S)	Portable
PS 9014	55 gal tank (S.S)	Portable
PS 9015	55 gal tank (S.S)	Portable
PS 9016	55 gal tank (S.S)	Portable
PS 9017	55 gal tank (S.S)	Portable
PS 9018	55 gal tank (S.S)	Portable
PS 9019	55 gal tank (S.S)	Portable
PS 9030	55 gal tank (S.S)	Portable
PS 9039	8 gal tank (S.S)	Portable
PS 9041	8 gal tank (S.S)	Portable
PS 9042	8 gal tank (S.S)	Portable
PS 9046	5.2 gal tank (S.S)	Portable
PS 9049	8 gal tank (S.S)	Portable
PS 9050	8 gal tank (S.S)	Portable

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Other Equipment:

PS 9052	8 gal tank (S.S)	Portable
PS 9065	55 gal tank (S.S)	Portable
PS 9066	55 gal tank (S.S)	Portable
PS 9073	5 gal tank (S.S)	Portable
PS 9074	12 gal tank (S.S)	Portable
PS 9075	12 gal tank (S.S)	Portable
PS 9079	16 gal tank (S.S)	Portable
PS 9080	5 gal tank (S.S)	Portable
PS 9087	20 gal tank (S.S)	Portable
PS 9088	5 gal tank (S.S)	Portable
FH 72	Walk-in hood	Clean-up room

Emission Estimates and Calculations:

Total pilot plant emissions are a function of batch size, number of batches run, and the quantity of unrecovered solvent for each batch. Emissions calculations are based on these parameters. Reactor capacity determines the maximum batch size. The number of batches processed is obtained from historical data, and statistical analyses are the basis for projecting future operations. Solvent usage information is obtained from Building 110 process mass balances and is used, in combination with the anticipated batch size and number of batches run, to estimate future emissions.

For a module, the amount of product generated in reactors is the maximum amount of material that can be filtered/centrifuged, then dried. During filtration, the filtrate and any associated VOC fumes are sent to a receiving reactor. The VOC emissions vent through the reactor vent, which is equipped with a -10 degree centigrade primary condenser. When filtration is complete, the filter is opened under a walk-in hood with a face velocity of 100 feet per minute (Volumetric flow, $Q = 3600$ CFM).

The emissions estimates assume a maximum of 80 batches per module per year based on the 1990, 1991, and the first half of 1992 throughput.

The average time estimated for each batch is 32 hours. The potential number of batches that can be processed in 8760 hours is approximately 274 batches per module.

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Based on the data provided by Eli Lilly and company, the volatile organic compounds (VOC) emissions based on 8760 hours per year of operation is given by:

$$\begin{aligned} \text{Uncontrolled Potential VOC emissions} &= \text{Emissions from reactors, filters, dryers, and centri-} \\ &\quad \text{-fuges etc. + Emissions from the tanks + Emissions} \\ &\quad \text{from Syltherm System} \\ &= \{(29.31 \text{ tons/yr}) / (80 \text{ batches/module/yr})\} * (274 \\ &\quad \text{batches/module/yr}) \\ &\quad + 0.313 \text{ tpy} + 0.18 \text{ tpy} \\ &= 101.283 \text{ tons/yr} \end{aligned}$$

However the company is taking a limit of processing 80 batches per module per year only. Hence actual or potential maximum emissions of VOC will be based on 80 batches per module per year only. In this case the potential volatile organic compounds (VOC) emissions from the pilot plant in Building 110 will be 29.80 tons per year.

The following tables give the average emissions of VOC from different modules taking into consideration of processing only 80 batches per module per year.

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Table 13

Summary of Uncontrolled Potential VOC Emissions in tons per year (TPY) from Existing and Proposed Building 110 Process Equipment

MODULE	REACTOR EMISSIONS	DRYER EMISSIONS	FILTER & CENTRIFUGE EMISSIONS	TANK	FUGITIVE EMISSIONS	TOTAL
A	2.26	0.36	0.40		1.02	4.04
B	1.16	0.25	0.40		1.02	2.83
C	1.71	0.30	0.40		1.02	3.43
D	3.73	0.50	0.40		1.02	5.65
E	3.36	0.46	0.40		1.02	5.24
F	3.36	0.46	0.40		1.02	5.24
30 Gallon-A	0.11	0.04	0.20		0.14	0.49
30 Gallon-B	0.10	0.04	0.20		0.11	0.45
C-Wing	0.79	0.18	0.40		0.57	1.94
Acetone Tank				0.144		0.144
Waste Solvent Tank				0.169		0.169
Syltherm System				0.18		0.18
TOTAL	16.58	2.59	3.20	0.493	6.94	29.80

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Table 14

Uncontrolled VOC Point Source Emissions Stream Summary
(lb/hr)

MODULE	AVERAGE REACTOR EMISSIONS	AVERAGE DRYER EMISSIONS	AVERAGE FILTER & CENTRIFUGE EMISSIONS	MINIMUM FLOW RATE (ACFM)	MAXIMUM FLOW RATE (ACFM)
A	2.35	1.49	5.0	0.71	10.0
B	1.20	1.04	5.0	0.50	10.0
C	1.78	1.27	5.0	0.60	10.0
D	3.89	2.09	5.0	0.99	10.0
E	3.51	1.94	5.0	0.92	10.0
F	3.51	1.94	5.0	0.92	10.0
30 Gallon-A	0.12	0.18	2.5	0.06	10.0
30 Gallon-B	0.10	0.16	2.5	0.05	10.0
C-WING	0.82	0.73	5.0	0.35	10.0
Acetone Tank	-----0.0000164				
Waste Solvent Tank	0.0000192				
Syltherm System	0.0000205				

The VOC emissions in lb/hr are calculated from emissions in tons/yr, using 80 batches per year, 24 hours reaction time per batch, 6 hours drying time per batch, and two hours filtration time per batch. Emission stream minimum flow rate is the minimum flow required to transport the VOC mass at the rate shown in the table 14, assuming emission stream saturation with VOC and ideal gas behavior. The maximum flow rate is based on vacuum pump ratings. The tanks emissions are based on 8760 hours per year.

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Note:

1. The maximum VOC emissions from each reactor, vacuum dryer, rotary dryer, filter and centrifuge are estimated to be more than 15 pounds per day as per Eli Lilly and Company.

Table 15

Uncontrolled and Controlled Emissions if low temperature condensers are installed on the equipment required by rule 326 IAC 8-5-3 (b)

VOC Emissions in tons/year						
Module	Reactor	Centrifg	Vac.Dry	fugitive	Tank	Total
A Uncont. Emissions	2.26	0.40	0.36	1.02		4.04
Cont. Emissions*	0.52	0.09	0.08	1.02		1.85
VOC Removed	1.60	0.31	0.28	0.00		2.19
VOC Removal Effi	77 %	77 %	77 %	0 %		54 %
B Uncont. Emissions	1.16	0.40	0.25	1.02		2.83
Cont. Emissions	0.27	0.09	0.06	1.02		1.44
VOC Removed	0.89	0.31	0.19	0.00		1.39
VOC Removal Effi	77 %	77 %	77 %	0 %		49 %
C Uncont. Emissions	1.71	0.40	0.30	1.02		3.43
Cont. Emissions	0.39	0.09	0.07	1.02		1.57
VOC Removed	1.32	0.31	0.23	0.00		1.86
VOC Removal Effi	77 %	77 %	77 %	0 %		54 %
D Uncont. Emissions	3.73	0.40	0.50	1.02		5.65
Cont. Emissions	0.86	0.09	0.11	1.02		2.08
VOC Removed	2.87	0.31	0.39	0.00		3.57
VOC Removal Effi	77 %	77 %	77 %	0 %		63 %
E Uncont. Emissions	3.36	0.40	0.46	1.02		5.24
Cont. Emissions	0.77	0.09	0.11	1.02		1.99
VOC Removed	2.59	0.31	0.35	0.00		3.25
VOC Removal Effi	77 %	77 %	77 %	0 %		62 %
F Uncont. Emissions	3.36	0.40	0.46	1.02		5.24
Cont. Emissions	0.77	0.09	0.11	1.02		1.99
VOC Removed	2.59	0.31	0.35	0.00		3.25
VOC Removal Effi	77 %	77 %	77 %	0 %		62 %
30 Uncont. Emissions	0.11	0.20	0.04	0.14		0.49
GAL Cont. Emissions	0.03	0.05	0.01	0.14		0.22
A VOC Removed	0.08	0.15	0.03	0.00		0.27
VOC Removal Effi	77 %	77 %	77 %	0 %		55 %
30 Uncont. Emissions	0.10	0.20	0.04	0.11		0.45
Gal Cont. Emissions	0.02	0.05	0.01	0.11		0.19
B VOC Removed	0.08	0.15	0.03	0.00		0.26
VOC Removal Effi	77 %	77 %	77 %	0 %		58 %
C Uncont. Emissions	0.79	0.40	0.18	0.57		1.94
Wing Cont. Emissions	0.18	0.09	0.04	0.57		0.88
VOC Removed	0.61	0.31	0.14	0.00		1.06
VOC Removal Effi	77 %	77 %	77 %	0 %		54 %

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A T	Uncont. Emissions					0.144	0.144
c a	Cont. Emissions					0.071	0.071
e nk	VOC Removed					0.073	0.073
tone	VOC Removal Effi					51 %	51 %
W T	Uncont. Emissions					0.169	0.169
a a	Cont. Emissions					0.169	0.169
s nk	VOC Removed					0.000	0.000
te	VOC Removal Effi					0 %	0 %
Syl	Uncont. Emissions					0.18	0.18
the	Cont. Emissions					0.18	0.18
rm	VOC Removed					0.00	0.00
sys	VOC Removal Effi					0 %	0 %
T*	Uncont. Emissions	16.58	3.20	2.59	6.94	0.50	29.80
o	Cont. Emissions	3.81	0.73	0.59	6.94	0.42	12.64
t	VOC Removed	12.63	2.47	2.00	0.00	0.08	17.16
a	VOC Removal Effi	77 %	77 %	77 %	0 %	16 %	58 %
l							

* One 100 gallon reactor is uncontrolled.

Notes:

1. Reactor emissions stream removal efficiency is based on 96.3 % VOC removal from 80 % of emissions stream. The condensers assumed are -25 degree centigrade condensers.
2. 20 % of annual emissions are from aqueous (>1% water) solutions that can not be controlled by low temperature condensation due to freezing problems.

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Table 16

Uncontrolled and controlled emissions if low temperature condensers are not installed on the equipment required by rule 326 IAC 8-5-3 (b), but only primary surface condensers are used on reactors as control devices.

VOC Emissions in tons/year						
Module		Reactor	Centrfg	Vac.Dry	fugitive	Tank
A	Uncont. Emissions	2.26	0.40	0.36	1.02	
	Cont. Emissions*	0.93	0.40	0.36	1.02	
	VOC Removed	1.33	0.00	0.00	0.00	
	VOC Removal Effi	59 %	0 %	0 %	0 %	
B	Uncont. Emissions	1.16	0.40	0.25	1.02	
	Cont. Emissions	0.40	0.40	0.25	1.02	
	VOC Removed	0.76	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
C	Uncont. Emissions	1.71	0.40	0.30	1.02	
	Cont. Emissions	0.59	0.40	0.30	1.02	
	VOC Removed	1.12	0.00	0.0	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
D	Uncont. Emissions	3.73	0.40	0.50	1.02	
	Cont. Emissions	1.28	0.40	0.50	1.02	
	VOC Removed	2.45	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
E	Uncont. Emissions	3.36	0.40	0.46	1.02	
	Cont. Emissions	1.16	0.40	0.46	1.02	
	VOC Removed	2.20	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
F	Uncont. Emissions	3.36	0.40	0.46	1.02	
	Cont. Emissions	1.16	0.40	0.46	1.02	
	VOC Removed	2.20	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
30 GAL A	Uncont. Emissions	0.11	0.20	0.04	0.14	
	Cont. Emissions	0.04	0.20	0.04	0.14	
	VOC Removed	0.07	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
30 Gal B	Uncont. Emissions	0.10	0.20	0.04	0.11	
	Cont. Emissions	0.03	0.20	0.04	0.11	
	VOC Removed	0.07	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
C Wing	Uncont. Emissions	0.79	0.80	0.18	0.57	
	Cont. Emissions	0.27	0.80	0.18	0.57	
	VOC Removed	0.52	0.00	0.00	0.00	
	VOC Removal Effi	66.6 %	0 %	0 %	0 %	
A T c a e n t k one	Uncont. Emissions				0.144	0.144
	Cont. Emissions				0.071	0.071
	VOC Removed				0.073	0.073
	VOC Removal Effi				51 %	51 %
W T a a s nk te	Uncont. Emissions				0.169	0.169
	Cont. Emissions				0.169	0.169
	VOC Removed				0.000	0.000
	VOC Removal Effi				0 %	0 %

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Syl	Uncont. Emissions					0.18	0.18
the	Cont. Emissions					0.18	0.18
rm	VOC Removed					0.00	0.00
sys	VOC Removal Effi					0 %	0 %
T	Uncont. Emissions	16.58	3.20	2.59	6.94	0.50	29.80
o	Cont. Emissions	5.86	3.20	2.59	6.94	0.42	19.01
t	VOC Removed	10.72	0.00	0.00	0.00	.08	10.79
a	VOC Removal Effi	65 %	0 %	0 %	0 %	16 %	36 %
l							

* One 100 gallon reactor is uncontrolled.

Notes:

1. Reactor emissions stream removal efficiency is based on 82.0 % VOC removal from 80 % of emissions stream. The temperature of the working fluid in the condensers, measured at the inlet of the condenser, is assumed to be -10 degrees centigrade.
2. 20 % of annual emissions are from aqueous (>1% water) solutions that can not be controlled by low temperature condensation due to freezing problems.

Total Particulate matter (PM) Emissions:

Potential particulate matter (PM)

emissions from portable mills and blenders < 3 lbs/hr or 25 lbs/day

Potential Emissions of PM = (3 lbs/hr) * (8760 hrs/yr) / (2000 lbs/ton)
= 13.14 tons/yr

Total Particulate matter 10 micron (PM10) Emissions:

All particulates emissions are less than 10 micron.

Potential Emissions of PM10 = Potential Emissions of PM
= 13.14 tons/yr

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AIR TOXICS

Total controlled VOC emissions = 19.01 tons/yr
from proposed RACT

Air Toxics	% of VOC Emissions	Controlled Potential Emissions (TPY)
Methanol	8.7	1.65
Methylene Chloride	11.9	2.26
Toluene	8.9	1.69
Chloroform	3.2	0.60
Methyl tert - Butyl Ether (MTBE)	5.8	1.10
Total		7.30

The air toxic emissions are less than 10 tons per year each and the total emission of all toxic is less than 25 tons per year.

Description of Proposed RACT to fulfill the requirements of rule 326 IAC 8-1-5 in lieu of fulfilling the rule 326 IAC 8-5-3

REACTORS:

Each reactor vessel (with the exception of a 100 gallon high pressure hydrogenation reactor in module A that due to potential extremely high pressure operating conditions is not equipped with a condenser) in Building 110 is directly connected or will be connected to a primary reactor condenser. The temperature of the working fluid at the inlet of these condensers is -10 degrees centigrade or colder. When venting aqueous/VOC mixtures or other mixtures which will freeze at -10 degrees centigrade, the primary reactor condensers will be operated at a warmer temperature to prevent formation of ice in the condenser.

Operating the primary reactor condensers at -10 degree centigrade during material transfer and venting will reduce Building 110 uncontrolled reactor VOC emissions of 29.8 TPY by approximately 10.79 TPY.

Lilly is proposing RACT for reactor vessels to use primary condensers with a working fluid inlet temperature of -10 degree centigrade for mixtures that will not freeze at -10 degree centigrade (includes most aqueous streams). The primary reactor condensers will operate during reactor venting, material transfer, and distillation. Lilly will record the working fluid temperature at the inlet and outlet of the primary reactor condensers while the condensers are in operation and vented.

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VACUUM DRYERS AND ROTARY DRYERS:

Maximum VOC emissions from any one vacuum air dryer are estimated to be 0.50 tons per year. The maximum VOC emissions may exceed 15 pounds per day. There are no controls proposed for vacuum dryers or rotary dryers.

CENTRIFUGES, AGITATED FILTER/DRYERS, AND FILTERS:

Maximum VOC emissions from any one centrifuge/filter are estimated to be 0.40 tons per year. The maximum VOC emissions may exceed 15 pounds per day for the centrifuges and 33 pounds per day for the filters. There are no controls proposed for centrifuges or filters. Walk-in hoods are assumed to be a part of filters.

EQUIPMENT WHICH MEET PART OF RULE 326 IAC 8-5-3:

CENTRIFUGES AND FILTERS:

All Building 110 centrifuges and filters having an exposed liquid surface containing VOC will be enclosed. Hence it meets the rule 326 IAC 8-5-3(b)(4).

AIR TRAY DRYERS, PROCHROM COLUMN, MACE COOLING SYSTEM, AND DOWTHERM J SYSTEM:

VOC emissions from these equipment are less than 33 pounds per day, hence it meets the rule 326 IAC 8-5-3(c).

C-WING VACUUM SHELF DRYERS:

VOC emissions from these dryers are less than 13 pounds per day, hence it meets rule 326 IAC 8-5-3(b).

STORAGE TANKS:

A 4,000 gallon acetone (Vapor Pressure of 3.5 psia) storage tank is a component of Building 110 processes. The acetone tank is equipped with a vapor balancing system that is 90 % effective in reducing emissions during deliveries.

The acetone tank vapor recovery system will reduce VOC emissions by 0.073 TPY.

All storage tanks for VOCs with a vapor pressure greater than 0.5 psia at 20 degree centigrade are equipped with pressure/vacuum conservation vents set at a minimum of +/- 0.03 psia.

Hence it meets the rule 326 IAC 8-5-3(b)(3).

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IN PROCESS TANKS:

All in-process tanks containing VOCs are equipped with tight fitting covers. These covers are closed at all times unless production, sampling, inspection, or maintenance activities require access to the tank. Hence it meets the rule 326 IAC 8-5-3(b) (5).

EQUIPMENT LEAKS:

Building 110 standard operating procedure is to repair all visible equipment leaks as soon as possible. During module operation, process operators will inspect vessels and equipment (valves, flanges, etc.) for visible indications of leaks. Any leaks are repaired as soon as the leaking component is off line for a period of time long enough to complete the repair. Hence it meets the rule 326 IAC 8-5-3(b) (6).

TECHNOLOGICAL FEASIBILITY OF POTENTIAL VOC CONTROL TECHNOLOGIES:

Eli Lilly and company evaluated eight different control technologies. They are described and evaluated in the following paragraphs.

1. Recuperative Thermal Incineration - This is recommended for emission streams containing a minimum of 20 ppmv of combustible VOCs but less than 25 % of the lower explosive limit (LEL) of the pollutant. If high concentrations are present, additional air, otherwise known as dilution air, may be required to eliminate the explosive hazard. Thermal incinerators do not efficiently adjust to highly variable process exhaust flow rates due to poor mixing and varying residence times. Varying concentrations may also cause wide fluctuations of the combustion chamber temperature, adversely affecting the destruction efficiency. The incineration of halogenated organic compounds may cause corrosion problems within the incinerator and its exhaust stack. Scrubbing may be required to remove remaining halogenated emissions from the exhaust stream.

Emission stream flow rates and concentrations from Building 110 are highly variable, making application of recuperative thermal incineration technically infeasible.

2. Regenerative Thermal Incineration - Regenerative thermal incineration is applicable over the same range of concentrations as recuperative thermal incineration and has the same LEL requirements.

Emissions stream flow rates and concentrations from Building 110 are highly variable, thus making application of regenerative thermal incineration technically infeasible.

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3. Recuperative Catalytic Incineration - In this incineration system the effectiveness of any catalyst may be greatly reduced or even eliminated if the emission stream contains constituents, such as halogenated compounds, which coat the surface of the catalyst and allow the emission to pass unaffected. Thermal aging or erosion of the catalyst will cause catalyst failure.

Halogenated VOC containing solvents are used in Building 110 processes. Lilly also indicated that it may pilot test new halogenated solvents. Due to the wide variation in VOC solvent usage and catalyst blinding problems created by the presence of halogenated compounds in the existing and proposed building 110 process equipment stream, recuperative catalytic incineration is not considered a feasible technology.

4. Regenerative Catalytic Incineration - This system is uncommon in the U.S.A.

Due to similar problems with emissions stream variation and catalyst blinding as encountered in regenerative and recuperative incineration, this system is not considered a feasible VOC control technology.

5. Flare - Flares are normally applied when the heat content of the emission stream is greater than 300 btu/scf.

The heating value for the emissions stream in Building 110 is significantly lower than the minimum heating value of 300 btu/scf. This will require an excessive amount of supplementary fuel to sustain an adequate destruction efficiency. Therefore it is not a technically feasible control system.

6. Carbon Adsorption - This is most effective on emission streams containing 700 to 10,000 ppmv VOC concentration but less than 25 % of the LEL. The presence of liquid or solid particles or high boiling organics will require pretreatment procedures (such as filtration) to minimize bed plugging. A carbon adsorber system may have difficulties when controlling emission streams containing ketones (e.g. acetone, methyl ethyl ketones). Ketones exothermically polymerize on the carbon, clogging the pores on the surface of the carbon which reduces the effective amount of carbon contained in the vessel. This, in turn decreases the system efficiency. Dehumidification is usually necessary if the emission stream has a relative humidity greater than 50 %, and cooling may be required if the emission stream temperature exceeds 120 degree F.

Due to the high acetone (a ketones) usage in Building 110, carbon adsorption is not considered a technically feasible VOC control.

7. Absorption - Scrubbing is recommended for emission streams containing 250 to 10,000 ppmv that are readily soluble in water or another solvent.

Building 110 processes use a variety of solvents, some of which are not readily soluble in water. In addition, Building 110 does not operate a waste water pretreatment plant. Scrubber effluent would require off-site disposal, greatly increasing the cost of operating this control technology.

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Depending upon the VOC emissions controlled, scrubbing could be an economically viable control technology.

8. Condensation - Condensation systems are recommended for emission streams containing between 5,000 and 10,000 ppmv. Condensation is affected by the number and the nature of the constituents in the emission stream.

Control Technology Conclusion:

Only condensation and absorption were considered to be technically feasible VOC control method for the existing and proposed equipment in Building 110.

Economic Feasibility Analysis

Condensation and scrubber systems were considered feasible control systems. In each module, a scrubber system has a lower removal efficiency than a condenser system. The cost effectiveness for absorption and condensation controls for all the affected facilities are \$47,110 and \$34,113 per ton of VOC removed, respectively.

Even if one chooses the condensation control technologies for the above affected facilities, the condensation cost effectiveness of \$15,518 to \$191,871 per ton VOC controlled for different modules, when -25 degree centigrade condensers are used, far exceeds the generally acceptable VOC RACT cost effectiveness thresholds.

Capital Expenditure Required to Achieve -

A. Petitioned Level of Control:

Primary condensers on reactors are required for reflux operations and are currently in-place on existing reactors. Proposed reactors will also be equipped with primary condensers. No additional capital expenditure will be born by the company.

B. Control Levels Required by 326 IAC 8-5-3:

An approximate capital expenditure of \$ 1,815,462 and an annual cost of \$587,896 would be required to meet the rule 326 IAC 8-5-3(b) (2).

Energy Requirements for -

A. Petitioned Level of Control:

It would require an increase in annual electricity consumption of approximately 11,000 Kilowatt-hours.

B. 326 IAC 8-5-3 Control:

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It would require an increase in annual electricity consumption of approximately 17,000 kilowatt-hours.

Environmental Impact of -

A. Petitioned Level of Control:

VOC emissions to the air would be reduced by approximately 10.79 tons per year through implementation of the proposed level of controls. The volume of waste solvent transferred off-site for incineration would increase by approximately 10.79 tons per year. No other environmental impacts are foreseen.

B. 326 IAC 8-5-3 Control:

VOC emissions to the air would be reduced by approximately 17.16 tons per year through implementation of the RACT controls. The volume of waste solvent transferred off-site for incineration would increase by approximately 17.16 tons per year. No other environmental impacts are foreseen.

Impact of Cost on Eli Lilly and Co-

Complying with RACT per rule 326 IAC 8-5-3 will increase the research costs in Building 110 and in turn will increase the cost of the products. Proposed RACT by Eli Lilly and Company will not impact Eli Lilly and Company.

Health and Safety Impact -

No adverse impact is anticipated by either the proposed RACT or RACT per 326 IAC 8-5-3.

Relative Impact of Site-Specific RACT SIP Revision on Attainment & Maintenance Plan

If Building 110 emission sources had been able to comply with the RACT per rule 8-5-3(b), the actual emissions from the affected units would have been 0.033 tons/day VOCs in 1990. Under the proposed petitioned RACT plan, actual maximum emissions would be 0.051 tons/day, based on the projected operating schedule and control measures outlined in permit application and SIP revision. Therefore, a worst case difference of 0.018 tons/day would accrue by the approval of this SIP revision.

The worst case difference of 0.018 tons/day is 0.009 % of 1990 base year VOC emissions of 204.633 tons/day, 0.010 % of the Draft Maintenance Plan of projected 2006 VOC emission target of 175.496 tons/day, and 0.057 % of the projected point source total by the year 2006 of 31.256 tons/day. It also would account for 0.352 % of projected point source emissions growth from the Draft Maintenance Plan of 5.063 tons/day.

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Should Marion county not achieve VOC emission reduction targets as stated in the Draft Maintenance Plan, the requested SIP revision for Lilly represents only 0.22 % of the combined growth allowance and expected MACT reductions of 4.56 tons/day already accounted for in the redesignation request.

Given the small relative share of the attainment plan targeted emission level for VOCs in Marion County, it is not expected that approval of a SIP revision for this site-specific RACT will generate any significant impacts that would interfere with attainment or maintenance of the ozone NAAQS.

The State of Indiana has already requested the U.S.E.P.A to redesignate Marion County as attainment area for VOC.

Eli Lilly and Company's petition for a site-specific Reasonably Available Control Technology (RACT) plan for its pilot plant operations in Building 110, in lieu of RACT in rule 326 IAC 8-5-3, meets all the criteria for the petition to be approved as per rule 326 IAC 8-1-5.

This site-specific RACT plan is being submitted to the U.S.E.P.A as a SIP revision.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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February 20, 1996
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100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

CERTIFIED MAIL Z 366 263 341

Mr. Bernie Paul
Environmental Services
Eli Lilly and Company
Lilly Corporate Center
Indianapolis, Indiana 46285

Re: CP A097-5322, Plt ID No. 097-00072; existing equipment additions to CP 097-3341 for the pilot plant Building 110.

Dear Mr. Paul:

The Indiana Department of Environmental Management (IDEM) has reviewed your February 28, 1995, request for an amendment to the construction permit for the pilot plant Building 110 at Lilly Technology Center-South, located at 1555 S. Kentucky Avenue, Indianapolis, Indiana.

The construction permit is modified as follows:

- (1) The following existing equipment, which were inadvertently excluded in the original permit, are added to the construction permit.

Unit ID	Unit Description	Location: Wing/Module
PC992	20 Liter Superflow S.S Column	Portable
PC994	70 Liter Merck Glass Column	Portable
PC995	25 Liter Amicon glass Column	Portable
PS9020	15 Liter Superflow S.S Column	Portable
PS9021	15 Gallon Stainless Steel Tank	Portable
PS9022	15 Gallon Stainless Steel Tank	Portable
PS9023	15 Gallon Stainless Steel Tank	Portable
PS9043	5 Gallon Stainless Steel Tank	Portable
PS9044	5 Gallon Stainless Steel Tank	Portable
PS9046	5.2 Gallon Stainless Steel Tank	Portable

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Unit ID	Unit Description	Location: Wing/Module
PS9048	5 Gallon Stainless Steel Tank	Portable
PS9053	16 Gallon Stainless Steel Tank	Portable
PS9054	16 Gallon Stainless Steel Tank	Portable
PS9056	5 Gallon Stainless Steel Tank	Portable
PS9057	5 Gallon Stainless Steel Tank	Portable
PS9063	15 Gallon Stainless Steel Tank	Portable
PS9064	15 Gallon Stainless Steel Tank	Portable
PS9071	8 Gallon Stainless Steel Tank	Portable
PS9072	8 Gallon Stainless Steel Tank	Portable
PS9078	16 Gallon Stainless Steel Tank	Portable
PS9091	5 Gallon Stainless Steel Tank	Portable
T-M1A	75 Gallon Stainless Steel Tank	Portable
T-M1B	75 Gallon Stainless Steel Tank	Portable
T-M2A	75 Gallon Stainless Steel Tank	Portable
T-M2B	75 Gallon Stainless Steel Tank	Portable
T-M4B	75 Gallon Stainless Steel Tank	Portable
T-M5A	75 Gallon Stainless Steel Tank	Portable
T-M5B	75 Gallon Stainless Steel Tank	Portable
	20 Gallon Hastelloy-C Tank	Portable
	20 Gallon Hastelloy-C Tank	Portable
FD39	SS Rotary Vacuum Drum Filter	Portable
CNT501	Sharples Centrifuge	Portable
	Hot Oil System	
GR89	Fitzmill Grinder	Portable
TF1	25 Liter Tangential Flow Filter	Portable

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Unit ID	Unit Description	Location: Wing/Module
	30 Liter Glass Resin Column	Portable
	120 Liter Plexiglass Resin Column	Portable
	27 Liter Glass Extraction Column	C-Wing
	500 Liter SS Resin Column	C-Wing

2. The Operation Condition No. 4 is changed to show the applicable volatile organic compounds (VOC) limit per rule 326 IAC 8-5-3 for the equipment in the pilot plant Building 110 at Indianapolis. The Operation Condition No. 4 reads as follows:

Operation Condition 4. That pursuant to 326 IAC 8-1-5 and 326 IAC 8-5-3 the following shall be met:

- a) Volatile organic compounds (VOC) emissions from the pilot plant in Building 110 shall be limited to 19.01 tons/year based on a twelve month average rolled on a monthly basis.
- b) Based on the calendar month average, volatile organic compounds (VOC) emissions from each facility, covered under 326 IAC 8-1-5, shall be limited to as shown in the following table.

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
	500 Gallons Glass Lined Reactor	D/E	15
	300 Gallons Glass Lined Reactor	D/E	15
	200 Gallons Hastelloy Reactor	D/E	15
	100 Gallons Hastelloy Reactor	D/E	15
	100 Gallons Glass Lined Removable Reactor	D/E	15

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Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
	100 Gallons Glass Lined Removable Reactor	D/E	15
	Vacuum Self Dryer	D/E	15
	Vacuum Self Dryer	D/E	15
	Agitated Filter/Dryer	Portable	15
	PSE Catch Tank	D/E	15
	CIP System	Portable	15
	500 Gallons Glass Lined Reactor	D/F	15
	300 Gallons Glass Lined Reactor	D/F	15
	200 Gallons Hastelloy Reactor	D/F	15
	100 Gallons Hastelloy Reactor	D/F	15
	100 Gallons Glass Lined Removable Reactor	D/F	15
	100 Gallons Glass Lined Removable Reactor	D/F	15
	Vacuum Self Dryer	D/F	15
	Vacuum Self Dryer	D/F	15
	Agitated Filter/Dryer	Portable	15
	PSE Catch Tank	D/F	15
	CIP System	Portable	15
	50 Gallons Hastelloy Reactor	D/30 Gal-A	15
	50 Gallons Hastelloy Reactor	D/30 Gal-B	15
	30 Gallons Glass Lined Reactor	D/Gal-B	15
	16" Single Plate Filter (Hastelloy)	Portable	15

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Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
	16" Single Plate Filter (Hastelloy)	Portable	15
	13 gallons Evaporator	D/30 Gal-A	15
	50 Gallons Hastelloy Reactor	C/Portable	15
	50 Gallons Hastelloy Reactor	C/Portable	15
	50 Gallons Hastelloy Reactor	C/Portable	15
	50 Gallons Glass Lined Reactor	C/Portable	15
	50 Gallons Glass Lined Reactor	C/Portable	15
	50 Gallons Glass Lined Reactor	C/Portable	15
	30 Gallons Hastelloy Reactor	C/Portable	15
	30 Gallons Hastelloy Reactor	C/Portable	15
	30 Gallons Hastelloy Reactor	C/Portable	15
	30 Gallons Glass Lined Reactor	C/Portable	15
	30 Gallons Glass Lined Reactor	C/Portable	15
	30 Gallons Glass Lined Reactor	C/Portable	15
	5 Gallons Hastelloy Reactor	C/Portable	15
	5 Gallons Hastelloy Reactor	C/Portable	15
	5 Gallons Hastelloy Reactor	C/Portable	15
	5 Gallons Glass Lined Reactor	C/Portable	15
	5 Gallons Glass Lined Reactor	C/Portable	15
	5 Gallons Glass Lined Reactor	C/Portable	15
	Vacuum Self dryer	C/Portable	15
	Vacuum Self dryer	C/Portable	15
	Vacuum Self dryer	C/Portable	15
	Vacuum Self dryer	C/Portable	15

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Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
T-11	100 Gallons Hastelloy Reactor	D/A	15
T-12	100 Gallons Stainless Steel Reactor	D/A	15
T-13	200 Gallons Glass Lined Reactor	D/A	15
T-14	200 Gallons Hastelloy Reactor	D/A	15
T-15	100 Gallons Glass Lined Reactor	D/A	15
T-16	300 Gallons Glass Lined Reactor	D/A	15
T-21	50 Gallons Glass Lined Reactor	D/B	15
T-22	100 Gallons Glass Lined Reactor	D/B	15
T-23	100 Gallons Stainless Steel Reactor	D/B	15
T-24	50 Gallons Glass Lined Reactor	D/B	15
T-25	200 Gallons Glass Lined Reactor	D/B	15
T-26	200 Gallons Glass Lined Reactor	D/B	15
T-31	50 Gallons Stainless Steel Reactor	D/C	15
T-32	100 Gallons Glass Lined Reactor	D/C	15
T-33	100 Gallons Glass Lined Reactor	D/C	15
T-34	100 Gallons Stainless Steel Reactor	D/C	15
T-35	200 Gallons Stainless Steel Reactor	D/C	15
T-36	200 Gallons Stainless Steel Reactor	D/C	15
T-41	200 Gallons Glass Lined Reactor	D/D	15
T-42	100 Gallons Glass Lined Reactor	D/D	15
T-43	300 Gallons Glass Lined Reactor	D/D	15

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Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
T-44	200 Gallons Glass Lined Reactor	D/D	15
T-45	300 Gallons Glass Lined Reactor	D/D	15
T-46	300 Gallons Glass Lined Reactor	D/D	15
T-61	30 Gallons Glass Lined Reactor	D/30 Gal-A	15
T-62	30 Gallons Glass Lined Reactor	D/30 Gal-A	15
T-63	30 Gallons Glass Lined Reactor	D/30 Gal-B	15
VSD181	Vacuum Shelf Dryer	D/A	15
TDU182	Air Tray Dryer	D/A	33
TDU183	Air Tray Dryer	D/A	33
VSD281	Vacuum Shelf Dryer	D/B	15
TDU282	Air Tray Dryer	D/B	33
TDU283	Air Tray Dryer	D/B	33
VSD381	Vacuum Shelf Dryer	D/C	15
TDU382	Air Tray Dryer	D/C	33
TDU383	Air Tray Dryer	D/C	33
VSD481	Vacuum Shelf Dryer	D/D	15
TDU482	Air Tray Dryer	D/D	33
TDU483	Air Tray Dryer	D/D	33
VSD686	Vacuum Shelf Dryer	D/30 Gal-B	15
VSD696	Vacuum Shelf Dryer	D/30 Gal-A	15
VSD781	Vacuum Shelf Dryer	Solids Cont.	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

Review Engineer: Dr. T.P. Sinha

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
FH1	24" Single Plate Filter (S.S)	Portable	15
FH2	36" Single Plate Filter (S.S)	Portable	15
FH3	36" Single Plate Filter (S.S)	Portable	15
FH4	36" Single Plate Filter (Hastelloy)	Portable	15
FH6	24" Single Plate Filter (Glass Lined)	Portable	15
FH7	24" Single Plate Filter (Hastelloy)	Portable	15
FH8	36" Single Plate Filter (S.S)	Portable	15
FH9	24" Single Plate Filter (Hastelloy)	Portable	15
FH10	36" Single Plate Filter (Hastelloy)	Portable	15
FH11	36" Single Plate Filter (Hastelloy)	Portable	15
FH12	16" Single Plate Filter (Hastelloy)	Portable	15
FH13	30" Agitated Filter/Dryer (Hastelloy)	Portable	15
FH14	24" Single Plate Filter (Hastelloy)	Portable	15
FH16	16" Single Plate Filter (Hastelloy)	Portable	15
FS21	8" Multi-Plate Filter (S.S)	Portable	15
FS22	12" Multi-Plate Filter (S.S)	Portable	15
FS23	18" Multi-Plate Filter (S.S)	Portable	15
FS24	18" Multi-Plate Filter (Hastelloy)	Portable	15
FS25	18" Multi-Plate Filter (S.S)	Portable	15
FS26	8" Multi-Plate Filter (S.S)	Portable	15
FS27	8" Multi-Plate Filter (Hastelloy)	Portable	15
FS28	12" Multi-Plate Filter (Hastelloy)	Portable	15
FS29	18" Multi-Plate Filter (Hastelloy)	Portable	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

Review Engineer: Dr. T.P. Sinha

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
RC83	Distillate Receivers	Portable	15
PC991	Petchrom Column	D/High Bay	15
PC993	Distillation Column	C	15
LTB99	Low Temp. Bath	Portable	15
PF9093	8 gal. TFE-lined can (S.S)	Portable	15
PF9094	8 gal. TFE-lined can (S.S)	Portable	15
PG40	40 L Glass-lined tank	Portable	15
PG41	40 L Glass-lined tank	Portable	15
PG44	110 L Glass-lined tank	Portable	15
PG45	110 L Glass-lined tank	Portable	15
PG46	110 L Glass-lined tank	Portable	15
PG47	120 L Glass-lined tank	Portable	15
PG48	180 L Glass-lined tank	Portable	15
PG49	180 L Glass-lined tank	Portable	15
PG50	180 L Glass-lined tank	Portable	15
PG51	110 L Glass-lined tank	Portable	15
PG52	110 L Glass-lined tank	Portable	15
PG9024	15 gal Glass-lined tank	Portable	15
PG9025	15 gal Glass-lined tank	Portable	15
PG9026	15 gal Glass-lined tank	Portable	15
PG9027	15 gal Glass-lined tank	Portable	15
PG9028	50 gal Glass-lined tank	Portable	15
PG9029	50 gal Glass-lined tank	Portable	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

Review Engineer: Dr. T.P. Sinha

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
PG9081	5 gal Glass-lined tank	Portable	15
PG9082	75 gal Glass-lined tank	Portable	15
PH9114	8 gal Hastelloy C Can	Portable	15
PH9115	8 gal Hastelloy C Can	Portable	15
PH9116	8 gal Hastelloy C Can	Portable	15
PH9117	8 gal Hastelloy C Can	Portable	15
PH9118	8 gal Hastelloy C Can	Portable	15
PH9119	8 gal Hastelloy C Can	Portable	15
PH9120	8 gal Hastelloy C Can	Portable	15
PH9121	8 gal Hastelloy C Can	Portable	15
PS70	180 L tank (S.S)	Portable	15
PS9001	13 gal tank (S.S)	Portable	15
PS9002	62 gal tank (S.S)	Portable	15
PS9003	62 gal tank (S.S)	Portable	15
PS9004	62 gal tank (S.S)	Portable	15
PS9005	62 gal tank (S.S)	Portable	15
PS9006	62 gal tank (S.S)	Portable	15
PS9007	62 gal tank (S.S)	Portable	15
PS9008	62 gal tank (S.S)	Portable	15
PS9009	62 gal tank (S.S)	Portable	15
PS9010	55 gal tank (S.S)	Portable	15
PS9011	55 gal tank (S.S)	Portable	15
PS9012	55 gal tank (S.S)	Portable	15
PS9013	55 gal tank (S.S)	Portable	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

Review Engineer: Dr. T.P. Sinha

PS9014	55 gal tank (S.S)	Portable	15
PS9015	55 gal tank (S.S)	Portable	15
PS9016	55 gal tank (S.S)	Portable	15
PS9017	55 gal tank (S.S)	Portable	15
PS9018	55 gal tank (S.S)	Portable	15
PS9019	55 gal tank (S.S)	Portable	15
PS9030	55 gal tank (S.S)	Portable	15
PS9039	8 gal tank (S.S)	Portable	15
PS9041	8 gal tank (S.S)	Portable	15
PS9042	8 gal tank (S.S)	Portable	15
PS9046	5.2 gal tank (S.S)	Portable	15
PS9049	8 gal tank (S.S)	Portable	15
PS9050	8 gal tank (S.S)	Portable	15
PS9052	8 gal tank (S.S)	Portable	15
PS9065	55 gal tank (S.S)	Portable	15
PS9066	55 gal tank (S.S)	Portable	15
PS9073	5 gal tank (S.S)	Portable	15
PS9074	12 gal tank (S.S)	Portable	15
PS9075	12 gal tank (S.S)	Portable	15
PS9079	16 gal tank (S.S)	Portable	15
PS9080	5 gal tank (S.S)	Portable	15
PS9087	20 gal tank (S.S)	Portable	15
PS9088	5 gal tank (S.S)	Portable	15
FH112A	Walk-in hood	SCM Process	15
FH112B	Walk-in hood	SCM Cleanup	15
FH53A	Walk-in hood	30 gal A/1	15
FH53B	Walk-in hood	30 gal A/2	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072
Review Engineer: Dr. T.P. Sinha

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
FH54A	Walk-in hood	30 gal B/1	15
FH54B	Walk-in hood	30 gal B/2	15
FH55A	Walk-in hood	D/1	15
FH55B	Walk-in hood	D/2	15
FH55C	Walk-in hood	D/3	15
FH56A	Walk-in hood	B/1	15
FH56B	Walk-in hood	B/2	15
FH56C	Walk-in hood	B/3	15
FH57A	Walk-in hood	A/1	15
FH57B	Walk-in hood	A/2	15
FH57C	Walk-in hood	A/3	15
FH58A	Walk-in hood	C/1	15
FH58B	Walk-in hood	C/2	15
FH58C	Walk-in hood	C/3	15
FH72	Walk-in hood	Clean-up room	15
FH106	Walk-in hood	C-Wing	15
PC992	20 Liter Superflow SS Column	Portable	15
PC994	70 Liter Merck Glass Column	Portable	15
PC995	25 Liter Amicon glass Column	Portable	15
PS9020	15 Gallon Stainless Steel Tank	Portable	15
PS9021	15 Gallon Stainless Steel Tank	Portable	15
PS9022	15 Gallon Stainless Steel Tank	Portable	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

Review Engineer: Dr. T.P. Sinha

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
PS9023	15 Gallon Stainless Steel Tank	Portable	15
PS9043	5 Gallon Stainless Steel Tank	Portable	15
PS9044	5 Gallon Stainless Steel Tank	Portable	15
PS9046	5.2 Gallon Stainless Steel Tank	Portable	15
PS9048	5 Gallon Stainless Steel Tank	Portable	15
PS9053	16 Gallon Stainless Steel Tank	Portable	15
PS9054	16 Gallon Stainless Steel Tank	Portable	15
PS9056	5 Gallon Stainless Steel Tank	Portable	15
PS9057	5 Gallon Stainless Steel Tank	Portable	15
PS9063	15 Gallon Stainless Steel Tank	Portable	15
PS9064	15 Gallon Stainless Steel Tank	Portable	15
PS9071	8 Gallon Stainless Steel Tank	Portable	15
PS9072	8 Gallon Stainless Steel Tank	Portable	15
PS9078	16 Gallon Stainless Steel Tank	Portable	15
PS9091	5 Gallon Stainless Steel Tank	Portable	15
T-M1A	75 Gallon Stainless Steel Tank	Portable	15
T-M1B	75 Gallon Stainless Steel Tank	Portable	15
T-M2A	75 Gallon Stainless Steel Tank	Portable	15
T-M2B	75 Gallon Stainless Steel Tank	Portable	15
T-M4B	75 Gallon Stainless Steel Tank	Portable	15
T-M5A	75 Gallon Stainless Steel Tank	Portable	15
T-M5B	75 Gallon Stainless Steel Tank	Portable	15
	20 Gallon Hastelloy-C Tank	Portable	15

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

Review Engineer: Dr. T.P. Sinha

Unit ID	Unit Description	Location: Wing/Module	Daily VOC Emissions Limit (lbs/day)
	20 Gallon Hastelloy-C Tank	Portable	15
FD39	SS Rotary Vacuum Drum Filter	Portable	15
CNT501	Sharples Centrifuge	Portable	15
TF1	25 Liter Tangential Flow Filter	Portable	15
	30 Liter Glass Resin Column	Portable	15
	120 Liter Plexiglass Resin Column	Portable	15
	27 Liter Glass Extraction Column	C-Wing	15
	500 Liter SS Resin Column	C-Wing	15

For purposes of determining compliance with the daily emission limit for each facility, Lilly may calculate emissions using the following methods:

1. Using monthly mass balance data for each module to prorate a portion of the total emissions from the module to each facility.
 2. Calculating emissions from solvent and waste solvent storage tanks using equations in Section 4.3 of AP-42.
 3. When a portable emitting facility operates independently of any stationary emitting facility and vents emissions separately from any stationary emitting facility, the emissions from that portable facility shall be attributed to that portable facility. When a portable emitting facility is connected to and operate in conjunction with any stationary emitting facility and the emissions from the portable facility is vented with the emissions from the stationary facility, the emissions from the portable facility shall be attributed to the stationary facility.
- c) the primary reactor condensers shall operate during reactor venting, material transfer, distillation, and storage of filters in the reactors which are transferred from the filters. The primary reactor condensers working fluid inlet temperature shall

Amendment to Permit

Eli Lilly and Company
Indianapolis, Indiana

CP A097-5322
Plt.ID 097-00072

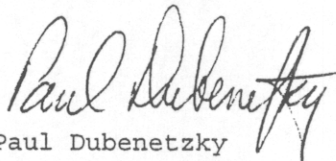
Review Engineer: Dr. T.P. Sinha

Be -10 degrees C or colder for mixtures that will not freeze at -10 degrees C (includes most non-aqueous streams).

- d) the working fluid temperature at the inlet and outlet of the primary reactor condensers shall be recorded while the condensers are in operation.
- e) any startup, shutdown, or malfunction period causing excessive emissions shall be recorded. The records shall include the start time, end time, and the estimated quantity of excess emissions emitted during the occurrence.

This permit modification modifies the Construction Permit No. CP 097-3341. All other permit conditions and limitations are to be in force.

Sincerely,



Paul Dubenetzky
Chief, Permit Branch
Office of Air Management

TPS

CC: File- Marion County
Indianapolis Air Pollution Control Section
Dick Sekula
Janet Mobley (Permit Tracking)
Nancy Landau (Data Support)
Jerri Curless (Compliance Data Section)



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone 317-232 8603
Environmental Helpline 1-800-451-6027

Proposed Approval of Construction and Operation Permit with SIP
revision for Eli Lilly and Company
in Marion County

Notice is hereby given that the above company located at 1555 S. Kentucky Avenue, Indiana has made application to the Indiana Department of Environmental Management, Office of Air Management for a permit to construct and operate a pilot plant operation in Building 110. Also the company has petitioned for a site-specific Reasonably Available Control Technology (RACT) pursuant to rule 326 IAC 8-1-5 in lieu of RACT required by rule 326 IAC 8-5-3. Based on a maximum of 80 batches of products produced per year and proposed RACT control, the potential uncontrolled and controlled emissions of volatile organic compounds (VOC) are estimated to be 29.34 tons/yr and 18.59 tons/yr respectively.

Notice is hereby given that there will be a period of 30 days from the date of publication of this notice during which any interested person may comment on why this proposed permit should or should not be issued. A copy of the application and staff review is available for examination at the Indianapolis Marion County Public Library located at 40 E St. Clair, Indianapolis, Indiana and the Air Pollution Control Section, Administration Building, 2700 S. Belmont Avenue, Indianapolis, Indiana. All statements, along with supporting documentation, should be submitted in writing to the Department of Environmental Management, Office of Air Management, 100 N. Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015.

A public hearing will be held on March 30, 1994 at 7:00 PM on the IUPUI campus, in the 2nd floor Hoosier Room, the Union Building, 620 Union Drive. All interested parties are invited to be present or to be represented at this meeting during which any interested person may comment on why this SIP revision should or should not be approved. There will be also a period of 5 days following the hearing in which you may comment in writing on this matter.

Persons not wishing to comment at these times, but wishing to receive notice of future proceedings conducted related to this action, must submit a written request to the Office of Air Management, at the above address. All interested parties of record will receive a notice of the decision on this matter and will then have 15 days after receipt of the Notice of Decision to file a petition for the administrative review. Procedures for filing such a petition will be enclosed with the Notice.

Questions should be directed to Mr. Tripurari Sinha, Office of Air Management, 100 N. Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or by telephone at 317/233-3031.

Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

TPS

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I hereby certify that the foregoing account
that no part of the same has been paid.

Date FEBRUARY 28 1981

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NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT
Processed Approval of Construction and Operation Permit with SIP revision for Eli Lilly and Company in Marion County.
Notice is hereby given that the above company located at 1555 S. Kentucky Avenue, Indianapolis, Indiana has made application to the Indiana Department of Environmental Management, Office of Air Management for a permit to construct and operate a pilot plant operation in Building 110. Also the company has petitioned for a site-specific reasonably Available Control Technology (RACT) pursuant to rule 326 (A)(2) in lieu of RACT.
326 (A)(2). Based on a maximum of six batches of products produced per year and proposed RACT control, the potential uncontrolled and controlled emissions of volatile organic compounds (VOC) are estimated to be 29.34 tons/yr and 0.39 tons/yr respectively. Notice is hereby given that there will be a period of 30 days from the date of publication of this notice during which any interested person may comment on why this proposed permit should or should not be issued. A copy of the application and staff review is available for examination at the Indianapolis Marion County Public Library located at 40 E. St. Clair, Indianapolis, Indiana and the Air Pollution Control Section, Administration Building, 2700 S. Belmont Avenue, Indianapolis, Indiana. All statements, along with supporting documentation, should be submitted in writing to the Department of Environmental Management, Office of Air Management, 100 N. Senate Avenue, P.O. Box 4015, Indianapolis, Indiana 46204-0015.
A public hearing will be held on March 30, 1981 at 7:00 PM on the IUPUI campus, in the 2nd floor Hoosier Room, the Union Building, 430 Union Drive. All interested parties are invited to be present or to be represented at this meeting during which any interested person may comment on why this SIP revision should or should not be approved. There will be also a period of 5 days following the hearing in which you may comment in writing on this matter.
Persons not wishing to comment at these times, but wishing to receive notice of future proceedings conducted related to this action, must submit a written request to the Office of Air Management, at the above address. All interested parties of record will receive a notice of the decision on this matter and will then have 15 days after receipt of the Notice of Decision to file a petition for the administrative review. Procedures for filing such a petition will be enclosed with the decision.
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APR 1 1994

STATE OF INDIANA)

COUNTY OF MARION)

State of Indiana
Department of Environmental Management
SS: Office of Air Management

COPY

IN THE MATTER OF:)

Cite Specific RACT)

Eli Lilly, Indianapolis.)

The transcript of proceedings were taken before me, Debbi S. Austin, RPR and Notary Public in and for the County of Marion, State of Indiana, at the IUPUI Union Building, 620 Union Drive, Hoosier Room, Indianapolis, Marion County, Indiana, on March 30, 1994, commencing at 7:10 p.m., before Hearing Officer Paul Dubenetzky.

ACCURATE REPORTING OF INDIANA
12922 BRIGHTON AVENUE
CARMEL, IN 46032
(317) 848-0088

A P P E A R A N C E S

FOR IDEM:

Mr. Tipurari Sinha
INDIANA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
Indiana Government Center
100 North Senate, 13th Fl.
Indianapolis, IN 46204

FOR ELI LILLY:

Mr. Michael R. Smith
Mr. Bernard O. Paul
Mr. William R. Quillen
ELI LILLY AND COMPANY
Lilly Corporate Center
Indianapolis, IN 46285

1 THE HEARING OFFICER: This is a
2 public hearing on behalf of the Indiana
3 Department of Environmental Management, the
4 Office of Air Management regarding a proposed
5 issuance of a construction permit and revision
6 to the Indiana State Implementation Plan
7 regarding the construction and operation of a
8 pilot -- an Eli Lilly pilot plan in Building
9 110 at the Lilly Technology Center South in
10 Indianapolis.

11 If a decision is made to issue this
12 permit and to accept the site specific SIP
13 revision, Indiana will make a formal submittal
14 to the EPA under the Clean Air Act for
15 revising state implementation plans.

16 My name is Paul Dubenetzky. I'm
17 chief of the permits branch in the Office of
18 Air Management, and I'll act as the hearing
19 officer tonight. Also here is Trip Sinha who
20 is the permit engineer who worked on this
21 permit and reviewed the request for the site
22 specific SIP revision. We also have a court
23 reporter here tonight to make sure we have a

1 record of the hearing, and she'll prepare a
2 transcript of all comments that we receive as
3 a result of this hearing today.

4 The purpose of the public hearing is
5 to afford interested persons an opportunity to
6 comment in favor of or against the issuance of
7 this proposed permit as well as approval of
8 the site specific SIP revision. Appearance
9 blanks have been made available and
10 distributed prior to the hearing. If you
11 haven't filled one out, please do so. And if
12 you wish to speak tonight, I would appreciate
13 getting those appearance slips up here in a
14 few minutes.

15 Note on the slip that it asks that
16 you identify who you represent, and it's also
17 helpful to have correct mailing addresses so
18 that as a result of this hearing and in
19 following up on permit decisions we would be
20 able to notify you as we are required to under
21 Indiana law. Oral statements will be heard
22 today, or written statements if you'd like to
23 hand them to me or mail them to us by April

1 7th of 1994 are also accepted.

2 The transcript that's being made
3 today will be open for inspection, and a copy
4 of the transcript can be made available to any
5 person who requests it upon payment of the
6 photocopying cost.

7 At the conclusion of this public
8 hearing, a written report in the form of an
9 addendum to our technical support document
10 will be prepared that summarizes all the
11 comments that we received and will contain our
12 responses to those comments. It will also
13 address any decisions that are made either in
14 modifying, issuing, or denying the permit.

15 When presenting your opinions or
16 comments tonight, please keep them as factual
17 as possible and related to this facility and
18 the specific issues in the permit. Right now
19 I'll ask that Trip Sinha provide a brief
20 overview of our review of this permit as well
21 as the SIP revision, and then I'll open up the
22 hearing to take public comments.

23 MR. SINHA: My name is Tripurari

1 Sinha. On September 23rd, 1993, the Office of
2 Air Management received a petition for SIP
3 revision to propose site specific volatile
4 organics compounds (VOC) reasonably available
5 control technology (RACT) for process
6 equipment in Building 110 located at the Lilly
7 Technology Center South in Indianapolis.

8 On October 27, 1993, the Office of
9 Air Management received a construction permit
10 application relating to the construction and
11 operation of nine process modules, six
12 existing and three new ones. The amended
13 application for construction permit and SIP
14 revision was received on December 10, 1993.
15 Additional informations were received on
16 January 4th, 1994.

17 Lilly's construction permit serves
18 as the vehicle for IDEM to review the site
19 specific RACT plan and to issue a construction
20 permit with enforceable permit conditions that
21 embody the site specific RACT plan and that
22 exempt Building 110 reactors, centrifuges,
23 evaporators, distillate receivers, and vacuum

dryers from the requirements of Rule
326 IAC 8-5-3(b)(1).

Lilly's petition for SIP revision
and construction permit seeks relief from the
permit conditions in construction and
operating permits issued on August 7, 1987;
January 2, 1992; and July 16, 1993, by the
City of Indianapolis Air Pollution Control
Section (IAPCS).

The proposed modification to the
Building 110 consists of nine process modules,
each consisting of reactor vessels, filters,
centrifuges, and dryers in various
combinations; storage tanks and several other
portable equipment. Various volatile organic
compounds (VOC) are used primarily as solvents
in each unit operation.

Based on 24 hours per day, 7 days
per week, and 52 weeks per year, the potential
uncontrolled VOC emissions are estimated to be
100.4 tons per year. However, the company is
taking a limit of processing only 80 batches a
year. In this case, the potential

1 uncontrolled VOC emissions from the pilot
2 plant Building 110 will be 29.34 tons per
3 year. Since potential uncontrolled emissions
4 of VOC are greater than 25 tons per year, a
5 construction permit is required.

6 Marion County has been designated as
7 nonattainment for ozone and total suspended
8 particulates (TSP). Therefore, these
9 emissions were reviewed pursuant to the
10 requirements for Emission Offset. Marion
11 County has been designated as attainment or
12 unclassifiable for particulate matter 10
13 (PM10). Therefore, PM10 emissions were
14 reviewed pursuant to the requirements for
15 prevention of significant deterioration (PSD).
16 The emission offset and PSD requirements are a
17 set of regulations which have federal
18 enforceability in addition to state
19 enforceability.

20 This existing plant is classified as
21 a major stationary source for VOC for the
22 purposes of emission offset. This is also a
23 major stationary source for attainment

1 pollutants for the purposes of PSD.

2 This modification to an existing
3 source is not major for VOC, PM, and PM10,
4 because the net emissions increase is less
5 than the significant levels for PM10 and VOC,
6 and emission offset threshold level for PM.
7 Therefore, the emission offset and PSD
8 requirements do not apply.

9 The petition for site specific
10 reasonably available control technology (RACT)
11 for reactors, centrifuges, filters, vacuum
12 self dryers, agitated filter dryer,
13 evaporator, rotary vacuum dryer, and
14 distillate receivers for this pilot plant in
15 Building 110 as per Rule 326 IAC 8-1-5 in lieu
16 of Rule 326 IAC 8-5-3(b)(2) were reviewed.

17 This is a small source. Reasonable
18 controls are already on the existing equipment
19 and will be installed on the new equipment.
20 Additional controls are not economically
21 feasible for this source.

22 The Rule 326 IAC 8-05-3 requires
23 control equipment on the individual emitting

1 facility only if the uncontrolled VOC
2 emissions are more than 15 pounds per day.
3 VOC emissions from the individual facilities
4 will not exceed 15 pounds per day limit if the
5 emissions are averaged on a monthly basis.

6 The proposed RACT plan meets the
7 requirements of Rule 326 IAC 8-1-5.

8 Thank you, Paul.

9 THE HEARING OFFICER: Thanks, Trip.
10 Do we have anybody here that wishes to make a
11 statement or make a comment on either the
12 permit or the proposed approval of a site
13 specific RACT plan?

14 Hearing none, I will conclude this
15 hearing but mention that the comment period is
16 still open until April 7th, and we are
17 available to receive comments at our offices
18 at 100 North Senate, Indianapolis, Indiana.
19 Thank you.

20
21
22
23

1
2
3 STATE OF INDIANA)

4)

5 COUNTY OF MARION)

6
7 I, Debbi S. Austin, Registered Professional
8 Reporter and Court Reporter and Notary Public
9 within and for the County of Marion, State of
10 Indiana, do hereby certify that on the 30th
11 day of March, 1994, I took down in stenograph
12 notes the foregoing statement, and that the
13 transcript is a full, true, and correct
14 transcript made from my stenograph notes.
15

16
17 -----
18 Debbi S. Austin, RPR/NP

19
20 My Commission Expires:
21 July 16, 1995
22
23